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DISCOVERIES AND CURRENT EVENTS *

French North Africa: The Desert Locust (*Schistocerca gregaria*) (1).

ALGERIA.

1 June 1933. — Hatching of larvae reported over 3 hectares at the Douar Benian (Mascara).

A swarm settled at Tiriou, Douar Ouzera (Berrouaghia) and laid eggs over 1 ½ hectares.

Hatching reported from 1-5 June at Oued Sebihi, Chabet Rouh, Oued Kheneg, Oued Zemlane, Aïn Nehar, Mahouna, Benredja, Hadja Zerga, Chenigel, Dra Maul Karrouchia (Sidi Aïssa).

Hatching reported from 1-5 June at the Douar Magra (Barika).

Bands of hoppers of the 6th stage reported at the Douar Berhoum (Barika) and Ouled Adda Guebala (M'Sila).

Hopper bands reported in the region of Dermoune, Douar Kimmel (Aurès).

A pink swarm, coming from the S., settled at 10 a. m. at El-Amra (Khenchela). Left at 2 p. m., flying towards the N. N. E.

Hopper bands reported at Djebel Goua (Khenchela) travelling towards the N. N. E.

Hatching reported at Ouled Haniza and Krabid, Douar Ziana (60 kilometres S. S. E. of Tablat).

Egg-pods reported on this day covered 250 hectares in the mixed Commune of Chélif.

Hopper bands reported from 1-4. June at the Douars Oulache and Tadjemout (Aurès), travelling towards the N. N. W.

Hatching reported at the Douar Tadjemout (Aurès).

Hatching reported from 1-5 June in the region of Chellala des Adaouras (Sidi-Aïssa).

Hatching reported in the region of Turenne.

2 June 1933. — Hatching reported at Keskis and Oued Sisseb, Douar Aïn-Tiziret (Aïn-Bessem).

Hatching reported at the Douars Aïn-Hazem, Metnane and Sidi-Zouikia (Aïn-Bessem).

Hatching reported at the Douar Aziz-Boghari.

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

Bands of hoppers of the 6th stage reported from 2-7 June at the Douars Menaa and Tighanimine (Aurès).

Hatching reported at Kedah Firas, Douar Oued Labiod (Aurès).

Hopper bands reported in the Maadid, travelling N.

Hatching reported at Ouled Banedah (4 kilometres N. E. of Aumale).

General hatching reported at Toumiat, Douar Ras-el-Aïoun (Belezma).

Hatching reported at the Douar Djendel and Ouamri (le Djendel).

3 June 1933. — Hatching reported in various places in the Oueds Sahe and Soummam (Akbou).

Hatching reported at the Douar Ouled-Hellal (Boghari).

Hopper bands reported at the Douar Barika, 10 kilometres South of Barika, travelling N. E. and E.

Hatching reported at the Douar Tourtatsine (Tablat).

Hopper bands reported near Kherba.

Egg-pods reported at different points in the Commune of Descartes, covering 300 hectares.

Hopper bands reported near the Algerian Moroccan frontier (Marnia).

4 June 1933. — Fairly large pink swarms, coming from the S., flew over Barika, carried by the south wind.

A large swarm, coming from the S., flew over Boughezal, Douar El-Outayal (Aïn-Touta) between 2 and 5 p. m. flying N. W.

Hatching reported at the Douar Sidi-Sada (la Mina).

Large pink swarms, coming from the S. E., reported at Marroket, Raselerg, Miribel and Oued-Tabaloulet (El-Goléa) flying N. W.

Hatching reported at Draa Rass, Douar Bouzina (Aurès).

A very large pink swarm, coming from the S., settled at 3.30 p. m. at Laghouat. Part of this swarm left on the 5 at 1.45 p. m. flying N.

Hopper bands reported at Saora and Laoussif, Douar Berhoum (Barika) travelling E.

Bands of hoppers of the 5th stage reported at Oued Hamza and Aïn-Teboucha (S. E. of Barika) travelling N.

A pink swarm, coming from the S., flew over Oued Ghebbone, region of Djellal (Khenchela), flying N. W.

Egg-pods reported at Kerdja in the Oueds Sebaou and Aïssi (Tizi-Ouzou) over one hectare.

5 June 1933. — A pink swarm, coming from the S., settled in the evening at Mechta Tirchiouine, Douar Ouled Fatma (Belezma). Left on the 7, flying E. S. E.

Large pink swarms settled at 7 a. m. at El-Goléa. Left at 4 p. m. flying towards the N. W.

Hatching reported at the Douars Siouf and Ouled Hellal (Boghari).

Hatching reported at Kedah Firas, Douar Oued Taga (Aurès).

A pink swarm, coming from the S., passed at 10 kilometres S. S. E. of Barika, flying N. N. E.

Hatching reported at Marmala, Hamiet el Miet, El Atouta, Remilia and Aïn-Aïsneur, Douar Barika (Barika).

Hatching reported from 5-8 June at Ouldja el Khodra and Melgueloui, Douar Tadjemout (Aurès).

Hopper bands reported at Douar Oulache (Aurès) travelling N.

A large pink swarm, coming from the S., settled at 3 p. m. at Timimoun. Left on the 7.

Hopper bands reported at Oued Khelidj, Douar Gosbate (Barika).

Hatching and hopper bands reported at the Douars Oued-Berdi, Aïn-Tiziret, Sidi-Zouikia, Sidi-Khelifa and Aïn-Hazem (Aïn-Bessem).

Hopper bands reported at the Douar Beni-Ouassine (Marnia).

Hatching reported at Sokeure and Ouled Bakir (l'Arba).

6 June 1933. — Large pink swarms, coming from the S., settled in the evening at El-Outaya and at 5 kilometres S. of El-Kantara (Aïn-Touta).

Large hatching reported at Fontaine des Gazelles, Douar El-Outaya (Aïn-Touta).

Hatching reported at Chaïbia, Douar Chouarchi (Cassaigne).

Inconsiderable hatching reported at Harchaïa and Fritis (25 kilometres S. and 15 kilometres S. E. of Méchéria).

Very large hopper bands coming from S. and S. W. reported at Laghouat.

Hatching reported from 6-8 June at the Douar M'doukal (Barika) of eggs reported on 21 April.

Hatching reported between 6-10 June at Khenègue, Oued Zemlane and Aïn-Mehar (Sidi-Aïssa).

Hatching reported from 6-10 June at Draa Rass, Douar Bouzina, and Mezgoub, Douar Oued Taga (Aurès).

Hatching and hopper bands reported from 6-12 June at the Douar Berhoum (Barika).

Hatching reported at the Douar Ziana (Tablat).

Hopper bands reported at the Douars Tourtatsine and Mezrenna (Tablat).

Hatching reported from 6-8 June at Oued Seghir, Badib-el-Ahmar and Labiod, region of Nabah Eddib (Barika) from eggs laid on 21 April.

Hopper bands coming from the S. reported in the region of M'chouneche (Aurès).

An inconsiderable pink swarm, coming from the S. W., settled at 10 a. m. at Saora Heejir Ezzal, Tazna, region of Aïn-el-Hadjar (Barika). Left at midday, flying N. E.

Hatching reported at the Douar Beni Chaib (Chélif).

Isolated pink adults, coming from the S., reported at the Douars Hamma and Bou Teleb (les Rhira).

A yellow swarm reported from 6-11 June in the mixed Commune of Remchi.

7 June 1933. — A pink swarm, coming from the S. E., settled at 4 p. m. at St Joseph and Badrian (El-Goléa). Departed on the 8th at midday, flying N. W.

Hatching reported in the region of Aïn-el-Hadjar (Barika).

Large hatching reported at the Douar Magra (Barika).

Hatching reported in the region of Aïn-Defila (Barika).

Hatching reported at the Douars Tacheta and El-Aneb (les Braz).
Hopper bands reported at the Douar Beni-Ghomérane (les Braz).
Hatching reported from 7 June at Bougie.
A yellow swarm settled at 6 kilometres from Mascara, covering an area of 25 kilometres, laying eggs.
Egg-pods reported near Montagnac over an area of 50 hectares.
Hatching reported at Ouillis, Douar Chouaci (Cassaigne).
Hatching reported at Terfaïa el Maada, Draa Bechmine, Djerf Lahmar, Douar Aziz and at Sidi-Hamed, Douar Siouf (Boghari).

8 June 1933. — Hopper bands reported at Laoussej and Hedja Ezzal, region of Aïn-el-Hadjar (Barika), travelling E. N. E.
A pink swarm, coming from the S., settled at 2 p. m. at Nebka, 7 kilometres from Nebch Eddib (Barika).
Hopper bands coming from the W. (Morocco) reported at the Douar Beni Ouassine (Marnia), travelling N. E.
Hatching reported at the Douars Ouled Chafoa and Ouled Bou Abca (la Mina).
Hatching reported near the Medjana (Bibans).
Hopper bands coming from the S. (M'sila) reported at the Douars Maadid and Taglaït (Maadid).
Hatching reported at Azlat Kahil and Oued Boularnas, Douar Ouled Hellal (Boghari).
Hatching reported at Aïn-Deze, Douar Madena (Frenda).

9 June 1933. — Egg-pods reported near Berthelot.
Hatching reported at 4 kilometres to the S. of Berthelot over an area of 2 hectares.
Large hatching reported between Harchaïa and Nocania (28 kilometres S. of Méchéria).
Inconsiderable hatching reported in the Oued Sidi-Ahmed, Douar Azeffoun (Port-Gueydon).
Pink swarms, coming from the S. S. E., settled in the morning at In-Salah and departed at 12 a. m. flying N.
A large pink swarm, coming from the S. E., settled at 3 p. m. at Aoulef (In-Salah).
A large pink swarm, coming from the S. W., settled at 5 p. m. at Daya and Foum Zgag, region of Aïn-Defila (Barika) covering about one thousand hectares.
A pink swarm, coming from the S., settled at 10 a. m. at Berrian (40 kilometres N. of Ghardaïa).
A pink swarm, coming from the S., settled at 12 a. m. at the Douar M'doukal (Barika), flying N.
Hatching reported near Trolard Taza (Teniet-el-Haad).
Hatching reported at Kouberita and Boulezazène, Douar Siouf (Boghari).

10 June 1933. — A pink swarm, coming from the S. E., settled at 12 a. m. at In-Salah.
Inconsiderable hatching reported between La Pointe Rouge and El Marsa (Ténès).

A very large pink swarm, coming from the S., settled at 8 a. m. at Metlili (28 kilometres S. of Ghardaïa). Left on the 12th at 1 p. m., flying N.
Hatching reported at Touglaguel, Boufras and Azba Zoga, Douar Tourtatsine, and Behair, Douar El-Ouzanna (Tablat).
Hopper bands reported near Titen Yahia and Les Pins (le Télagh).
Hatching reported at Bouhamama and Aïn Defla, Douar Djebel Louh (le Djendel).
Large hopper bands covering 12 × 8 kilometres, reported at Aïn-el-Ibel (Djelfa).
Large hopper bands, coming from the S. and S. W., reported at Messad (Djelfa).
Large pink swarms reported at Aïn-el-Ibel, Zeira and Messaad (Djelfa).
Hopper bands reported at the Douars Hassasna Gheraba, Gheragas and Tiffrit (Saïda).
Hatching reported at the Douar Mihoub (Aïn-Bessem). Egg-pods reported in the Commune of Aïn-Taya over an area of 30 hectares.
Hatching reported at the Douars Kef Lakdar and Tirghane (Aïn-Boucif).

11 June 1933. — Hatching reported at Ouled Sehil, Douar Ouled Anteur (Boghari).
Hatching reported at Mouas, Douar Keelna and at Tagremaret (Frenda).
A pink swarm, coming from the S. W., settled at Tkout (Aurès), flying N. E.
Hatching reported from 11-15 June at the Douar Oued-Taga (Aurès).
Hatching and hopper bands reported from 11-15 June at Khenègue and Zemlane (Sidi-Aïssa).
Hatching reported at the Douars Hamma and Bou-Taleb (les Rhira).
Hatching reported near the village of Arba.

12 June 1933. — A large pink swarm, coming from the S. E., settled at 11 a. m. at Reggan (In-Salah). Left on the 12th, flying N.
A large pink swarm, coming from the E., settled at Aïn-Sefra.
Numerous pinks swarms, coming from the S., settled at Naama and Mocta Deli (Méchéria).
Large pink swarms, coming from the S., settled at Arbaoccat (80 kilometres S. W. of Géryville).
A pink swarm, coming from the S. W., settled from 12 a. m. to 2 p. m. at El-Goléa. Left on the 13th at 4 p.m., flying S. W.
Final hatching reported at Duperré.
A pink swarm, coming from the S., settled at Taouiala (Aflou).
Hatching reported at Oued-el-Braoui, Douar Aziz (Boghari).

13 June 1933. — A large pink swarm, coming from the S., settled at Taïba (30 kilometres E. of Géryville).
Large pink swarms, coming from the S., settled at Sebgag and Oulad Sidi-Hamza (Aflou), flying N.
Hopper bands reported from 13-17 June at the Douar Berhoum (Barika).
Inconsiderable hatching reported at Oued Lauagh, Douar Gosbate (Barika).
Hopper bands reported at the Douars Tighanimine and Rossina (Aurès).

14 June 1933. — A pink swarm, coming from the N. E., settled at 5 p. m. at Timi (Adrar).

A large pink swarm, coming from the S. E., settled at 1 p. m. at Deldoul Barka (Timimoun).

Bands of hoppers of the 6th stage reported at Aïn-el-Hadjar (Barika), travelling N. E.

Hatching reported at the Douars Bou-Taleb and Hamma (les Rhira).

15 June 1933. — Hatching reported in the Communes of Dellys and Rébeval.

A pink smarm, coming from the S. E., settled at Beni-Abbès.

Large pink swarms, coming from the S., settled at Aflou over an area of 50 kilometres.

A large pink swarm settled in the evening at Tabelbala (Saoura). Left on the 16, flying S. W.

Large hopper bands reported at El-Khadra, Taouiala, Dra Bouamoud, Khacha, Arara, Oued-Morra, Keneg El Himeur (Aflou).

Large pink swarms reported between Zenina and Géryville.

Hatching reported at the Douars Aïn-Tiziret, Metenane and Oued-Berdi (Aïn-Bessem).

16 June 1933. — Large hopper bands reported near Aflou.

Hopper bands reported from 16-20 June at Oued Zemlane and Djebel Graten (Sidi-Aïssa), travelling N.

Hopper bands reported at the Douars Tacheta and Zouggara (les Braz).

Hatching reported from 16-20 June at Coudiat Trab, Kedach Firas, Mezgoub, Teniet Talma, Douar Oued-Taga (Aurès).

17 June 1933. — Hatching reported at the Douars Tourtatsine and Tiara (Tablat).

Hatching and hopper bands reported at les Bibans.

Hopper bands reported at the Douars Beni-Oughlis, Timezrit and Fenaia (Soummam).

18 June 1933. — A large pink swarm, coming from the E., settled at Aïn-Sefra.

A large pink swarm, carried by the S. wind, settled at Arris (Aurès).

Inconsiderable hatching reported in the mixed Commune of Sersou.

19 June 1933. — A pink swarm, coming from the S. E., settled at 5 p. m. at Adrar.

Hopper bands reported at Titen Yahia, les Pins and at the Douar Angad (le Télagh).

Scattered hatching reported from 19-22 June in the Communes of Fort-de-l'Eau, Cap Matifou, Aïn-Taya, Rouiba (neighbourhood of Algiers).

20 June 1933. — A very large pink swarm, coming from the E., settled at Aïn-Sefra.

Inconsiderable hatching reported at Touadjour (15 kilometres S. of Méchéria).

Hopper bands reported at Menitna, Oued Sebih and Beldjelbane, Douar Zemlane and at Khenizat and Dra Sid el Mihoub, Douar Tafraout (Sidi-Aïssa).

Large bands of hoppers of the 6th stage, coming from Morocco, reported at Zoudj el Beghal (Marnia).

Hatching reported at the Douars Aïn-Hazem, Metenane, Oued-Berdi, Aïn-Tiziret (Aïn-Bessem).

Hatching reported from 20-24 June at Staouéli, Sidi-Ferruch (near Algiers).

21 June 1933. — Large pink swarms, coming from the S. E., settled on the 21 and especially on the 22 at Fort-Polignac.

A pink swarm, coming from the W., settled at Mocta Haidoussa, Douar Merouana (Belezma). Left, flying S. E.

Hatching reported at Rivet (near Algiers).

A very large pink swarm settled at Djelfa. Left on the 23, flying S.

22 June 1933. — Hatching reported near Saïda and Bou-Tlélis.

23 June 1933. — A rather large pink swarm, coming from the S., settled at Victor Duruy (Aïn-Touta). Left flying W.

A very large pink swarm, coming from the S., settled at Colomb-Béchar.

A pink swarm, coming from the S. E., settled in the evening at Tabelbala (Saoura).

Large hopper bands reported at the Maadid.

A pink swarm, coming from the W., settled on the 23 and 24 at the Douar Beni-bou-Saïd (40 kilometres S. of Marnia). Left on June 25.

24 June 1933. — A pink swarm, coming from the S., settled at the Douar Briket (Aïn-Touta).

Isolated pink adults, carried by the S. wind, settled at the Douar Oued Djenane (Aumale).

A large pink swarm, coming from the S., settled at Reveil Beni-Ounif. Left in the evening flying N.

Pink swarms reported in the Annexe of la Saoura.

Hatching and hopper bands reported in the mixed Commune of Les Bibans.

Inconsiderable hopper bands reported at Lapasset (Cassaigne).

25 June 1933. — A pink swarm, coming from the S., settled at Arris (Aurès).

Hopper bands reported at Tirman.

A rather large pink swarm, coming from the W., settled at Bou-Salem and Smail (Aïn-Touta). Left on the 26 in the afternoon, flying W.

Hopper bands reported at Adjeb, Douar Oued-Berdi (Aïn-Bessem).

26 June 1933. — A very large pink swarm, coming from the S., settled 10 kilometres S. W. of Géryville, flying N.

Hopper bands reported at the Douar Metarfa (M'sila).

27 June 1933. — A large pink swarm, coming from the N., settled at Tébessa between 1-2 p. m. flying S.

Large pink swarms reported at Aflou.

28 June 1933. — An inconsiderable pink swarm, coming from the W., at 6 p. m. flew over Géryville, flying E.

A pink swarm, coming from the S., settled in the evening at Ben Ghanem (oasis of Ghardaïa) and left, flying N.

A pink swarm reported at Tabelbala (Saoura).

Two pink swarms, coming from the S., settled at Zerouane and Ferkane, Douar Negrine (Tebessa). Left on the 29th, flying S.

29 June 1933. — Pink swarms, carried by the S. wind, reported in the regions of Aïn-Chabra, Kouf and Djebel Djebissa (Tébessa) flying N. W.

30 June 1933. — Inconsiderable bands of hoppers of the 5th and 6th stages reported at the Douar Tourtatsine (Tablat).

1 July 1933. — Hopper bands reported from 1 to 10 July along the Oued Zemlane, Douar Zemlane (Sidi-Aïssa).

2 July 1933. — Last hopper bands reported at the Douars Oued Djenane and Talguedid (Aumale mixed).

3 July 1933. — A large swarm coming from the E. settled in the evening near Aïn-Sefra.

A large swarm coming from the S. settled at Géryville.

4 July 1933. — Last hopper bands reported at the Douars Oued Berdi and Matenane (Aïn-Bessem).

A small swarm settled at Méchéria.

5 July 1933. — Large pink swarms coming from the S. (Djelfa) settled at the Douar Guelt es Stel (Aïn-Boucif).

Last hopper bands reported in the mixed commune of Aflou.

7 July 1933. — A large swarm coming from the W. settled at Géryville.

Last hopper bands reported in the mixed commune of Maâdid.

8 July 1933. — Last hopper bands reported at the Douars Medjana, El Achir and Teffreg (Les Bibans).

One swarm left Aflou at midday, flying N.

A large swarm coming from the E. settled at Aïn-Sefra. Left at midday on the 9, flying W.

10 July 1933. — Small hopper bands coming from the E. reported at the Douar Ouled Mareuf (Boghari).

14 July 1933. — A large swarm coming from the S. settled at Méchéria.

15 July 1933. — A medium sized pink swarm coming from the S. settled at 4 p. m. at Sidi Yanès (S. of Laghouat). Left at 9 a. m. on 16 July, flying N.

Numerous pink swarms coming from the S. were reported on the territory of the mixed commune of Aflou during the first fortnight of July.

16 July 1933. — A large pink swarm settled at 6 p. m. at Dar Arous, between the Douars Djemmorah and Branis (Aïn-Touta).

Pink swarms coming from the S. reported in the mixed commune of Bibans.

25 July 1933. — A large swarm reported in the Resaba (Beni-Abbès).

27 July 1933. — A large swarm passed and partly settled over Colomb-Béchar. The rest continued towards the S.

TUNIS.

6 July 1933. — A large swarm coming from the N. W. passed Tozeur, flying S. E.

MOROCCO.

1 July 1933. — Very large pink swarms settled at Id Brahim, 100 km S. of Tiznit (region of Marrakech).

A pink swarm of 3 × 5 km settled at Bou Denib (region of the Confins).

Large swarms reported in the Hamada du Rhir (region of the Confins)

Hopper bands reported over 30 hectares to the S. of Taza.

Small pink swarms left Ahl Chekka (region of Taza), flying W. S. W

2 July 1933 — Pink swarms passed at Skoura and the Aït ben Haddou (region of Marrakech)

3 July 1933 — A dense swarm coming from the W. passed Beni-Lent, near Kef el Rhar (region of Taza). Part circled in the valley and crossed the Oued Amelil on the 4th, flying towards Tissa. The other part flew towards the Oued Amelil and passed the night at the Oued Msaben.

A swarm coming from the N. passed Timezray (region of Taza), flying W. ; settled at Beni Abdallah, then departed towards Outat el Hadj.

4 July 1933. — A swarm coming from the S. circled over Tisgui ou Balloul (region of Marrakech).

At midday swarms passed Igherm (region of Marrakech), flying S. E.

A very dense swarm settled on the Meknassa (region of Taza). Left across the Oued Cherif, then on 7 July flew E.

A dense pink swarm of 1 × 5 km settled on the valley of the Oued Leben, near Tissa (region of Fez) and departed towards the S. W.

5 July 1933. — A swarm coming from the E. settled in Reba Fouiki (region of Taza), then flew E. over the Oued Fehra.

7 July 1933. — A pink swarm coming from the S. passed Reggou (region of Taza).

A swarm passed over El Aderj (region of Taza) flying from N. E. to S. W.

8 July 1933. — A pink swarm passed at 5 p. m. at Midelt (region of Meknès), flying E.

A pink swarm coming from the S. E. settled at Tamghilt (region of Taza). Flew away to the S. on the 9th.

10 July 1933. — A pink swarm coming from the S. settled on the palm plantation of Igli at Missour (region of Taza). Flew N. on the 11th.

A pink swarm coming from the S. settled at Meghraoua (region of Taza) and later flew W.

11 July 1933. — A pink swarm coming from the S. settled in the Ouled Chérif (region of Taza). Departed on the 12th, flying S.

15 July 1933. — A very dense swarm coming from the E. settled at Bou Denib (region of the Confins).

16 July 1933. — A yellow swarm coming from the N. E. settled on the Aoulouz (circle of Taroudant).

Two pink swarms settled on the palm plantation of Assas (circle of Tazzarine) and flew away N. E.

24 July 1933. — A pink swarm of 2 × 1 km settled near Demnat (region of Marrakech).

A pink swarm of 2 × 1 km coming from the N. W. settled at Ouled Ali (region of Taza).

A grey swarm of 6 × 3 km coming from the N. E. settled at Gourrama (region of the Confins).

England: The Colorado Beetle (*Leptinotarsa decemlineata*) (1).

On the 21st August, 1933, a dead specimen of the Colorado Beetle was discovered on the landing stage at Tilbury, Essex, by an entomologist on the staff of the Ministry's Plant Pathological Laboratory. A search in the neighbourhood resulted in the discovery on 23rd August of two further specimens (one dead) in the soil of an allotment not far away. The most intensive inspection of all other potato crops in the district failed to disclose the presence of more beetles or of their larvae but as a precaution all field crops of potatoes within 16 kilometres of Tilbury in Essex, and within 8 kilometres of Gravesend in Kent were sprayed by the Government with an arsenical wash. The soil of the allotment in which the beetles were discovered was fumigated with carbon bisulphide, and as an additional precaution the treatment will be repeated during the autumn.

No Colorado Beetles have been discovered elsewhere in the British Isles.

The measures described above were taken under the Colorado Beetle Order of 1933 (Destructive Insects and Pests Acts, 1877 to 1927).

Angola: Locust Movements (2).

2 January 1933. — A large swarm passed over the civil post of Mutembo, district of Bié, coming from the N. and flying S. The colour of the locusts was not reported.

30 January 1933. — Immense swarms of the Red Locust (*Nomadacris septemfasciata*) coming from Humbe and Gambos, district of Huila, crossed the foot of the Chela mountain chain and invaded the following places :— Capangombe, Matambote, Munhino, Tampa, Bumbo and Circunlugira, district of Mossamedes.

3 February 1933. — Enormous hopper bands invaded the regions of Bruco, Gimba, Chitato and Chipia, district of Mossamedes. Various reports state that the upland plateau of Benguela continues to be invaded by locusts. On the high plateau of Malange (Baixa do Cassange) hoppers have developed to an extraordinary extent and have reached the winged state.

(1) Communication from the Ministry of Agriculture and Fisheries, London, official correspondent of the Institute.

(2) Communication from the Director of the Plant Pathological and Entomological Laboratory, Luanda, transmitted to the International Institute of Agriculture by the Government General of the Colony.

17 March 1933. — At the civil post of Otchinjau, civil circumscription of Gambos, district of Huila, the presence of a great number of hatching centres has been found ; it has been estimated that six of these centres extend over 500 sq. km. The oldest of the locusts are two to two and half months old. They must be the Red Locust which, after having crossed the foot of the Chela mountains, are now infesting Capangombe, Munhino, Bruco, district of Mossamedes.

The region of Otchinjau, where the locusts have laid, is sandy land covered with grass and spiny shrubs, mostly Leguminous.

From January to the end of March no further information regarding locust movements in the Colony has been received.

15 April 1933. — An immense swarm coming from the S. passed over Sá da Bandeira, district of Huila, and again returned S.

16 April 1933. — A swarm settled in the vicinity of Humpata, district of Huila, and it is thought that it was the same that passed over Sá da Bandeira. This swarm flew W., leaving many insects by the way.

18 April 1933. — A dense swarm passed Vila Luzo, district of Moxico, coming from the E. It is not known in which direction if flew.

19 April 1933. — To the W. of Humpata, district of Huila, an enormous swarm appeared coming from the S. and flew towards the N.

A swarm passed over the civil circumscription of Moxico, district of Moxico, coming from the E. and N. E., and flew S. W.

During this month no other communications were received concerning locust movements.

None of the notes received during April 1933 mentions the colour of the locusts observed, but it is supposed that they were *N. septemfasciata*. In future the colour will be specified, as the necessary arrangements have been made in this regard.

Cyrenaica : Some Insects Injurious to Crops (1).

Locusts. — Towards the middle of March 1933 individuals of *Schistocerca gregaria* Forsk. (type form) were found, while the solitary phase, which was rare and until the end of 1931 localised in the dunes of the shore of South Benghazi, was found to have extended considerably towards the east-north-east as far as Bir-Hakeim.

The result of the control measures undertaken in 1931 has been that in the following year and until the end of July 1933 no specimen of *Dociostaurus maroccanus* Thnb., was found in the region of Barce. I found, however, the presence of numbers of scattered adults of this species towards the end of June 1933 in the vicinity of Cyrene, Saf Saf and Zavia Tert.

(1) Communication from the official correspondent, Mr. G. Krüger, Entomologist of the Agricultural Services of Cyrenaica, Benghazi.

Ocnogyna mutabilis Trti. — During December 1932 and until the end of February 1933 the plain of Barce was invaded by enormous quantities of caterpillars of this moth. The most effective control means is crushing underfoot ; but along the Barce-Sidi Rahuma road, where the masses of caterpillars in their fourth stage resembled very dense swarms of migratory locusts, control was carried out by means of spraying with 1 % sodium arsenite.

Bryotropha plebejella Z. — Towards the middle of May 1933 a very few caterpillars of this Microlepidopteron were found on tomatoes in the region of Benghazi. The species is already known in southern Europe, but in spite of this exportation was stopped.

Egypt: Locust Report (1).

No *Schistocerca gregaria* were reported from June to August, 1933.

Scattered individuals of the Egyptian grasshopper *Anacridium ægyptium*, in both the nymphal and the adult stage were observed.

The grasshopper *Euprepocnemis plorans* was the more conspicuous species in the Delta and was lately reported from the oasis of Kharga. Poisoned bait was successfully applied.

Eritrea: The Desert Locust (*Schistocerca gregaria*) and the Tropical Migratory Locust (*Locusta migratoria migratorioides*) (2).

Few swarms of *Schistocerca gregaria* and *Locusta migratoria migratorioides* were reported during July 1933. It appears from the examination of the individuals collected that they were however nearly ready for copulation.

Last year during the same month eggs had already been laid and the hoppers had dispersed into various localities in the western lowland plain and the upland plateau.

For the moment the number of swarms is limited and not such as to give cause for any alarm.

From 1 to 8 July 1933 some swarms of *L. migratoria migratorioides*, reddish-brown in colour, coming from beyond the Abyssinian frontier were reported in the territory of Barentú and along the Gasc.

On the 8th two swarms were reported : one consisted of *L. migratoria migratorioides*, coming from the Lower Barca, and flew over Ascerà, Cheren, in the direction of Agat ; the other consisted of *Schist. gregaria*, reddish in colour, coming from the south-west, which flew over Om Ager in a north-easterly direction.

On the 10th reddish locusts (*Schist. gregaria*) coming from Adi Abò, Tigrai, settled near Tucul, then left on the 11th, flying towards Arresa, Seraè.

(1) Communication from the Director of the Entomological Section, Ministry of Agriculture, Egypt, to the International Institute of Agriculture.

(2) Communication from the official correspondent of the Institute, Dr. Rolando Guidotti, Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

From the 24th to the 31st numbers of reddish-brown and red individuals (*Schist. gregaria*) were reported in the eastern lowlands; they came from the north-west and were flying towards Acchelè Guzai (upland plateau).

Certain pastures and crops were damaged in the territory of Mahaio, Saganeiti.

United States: The Dutch Elm Disease discovered in New Jersey (1).

The disease of elm trees caused by *Graphium ulmi* Schwarz was found in the State of New Jersey in June, 1933. This disease is usually referred to in the United States as the Dutch elm disease because it was first described from Holland. That it has spread over Germany, Belgium, and France, and parts of Norway and northern Italy, and was first found in England in 1927, is well known to plant pathologists.

In the summer of 1930, the Dutch elm disease was discovered in the United States. Three infected trees were found in Cleveland, Ohio, and one in Cincinnati, Ohio. These trees were promptly removed and destroyed.

During 1931, three more diseased trees were found in Ohio all near original infections. In 1932, no case of the Dutch elm disease was found in spite of extensive search around the two early infections at Cleveland and Cincinnati and very limited scouting elsewhere in Ohio and adjoining States. Early in 1933, however, a single diseased tree was found in Cleveland.

Until this spring these Ohio infections were the only ones known in the United States. On June 11, specimens of the disease on a single elm tree in Memorial Park in Maplewood was submitted to the New Jersey Agricultural Experiment Station by Mr. Richard Walter, Park foreman. These specimens were forwarded to the Dutch elm disease laboratory at Wooster, Ohio, where cultures were made and *Graphium ulmi* was isolated.

On June 26, the tree was dead and was taken down and burned. Immediate steps were taken to initiate an eradication campaign somewhat similar to the one carried out in Ohio. It is already evident that the New Jersey outbreak is more serious and the infection more widely distributed than that in Ohio. In the work of eradication the United States Department of Agriculture, the New Jersey State Department of Agriculture, State Department of Conservation and Development, and Experiment Station are all cooperating, and a squad of men has been delegated from one of the Citizens' Conservation Camps to assist in scouting and in the removal of trees.

Up to July 27, sixty-nine infected trees, from which the fungus has been isolated and determined in culture have been found in fourteen towns and cities, in three New Jersey counties all within twenty miles of New York City.

As rapidly as definite determinations are made the diseased trees are being removed and burned. While it is recognized that the task here undertaken is

(1) Communication from the official correspondent of the Institute, Dr. Neil E. Stevens, Senior Pathologist, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington.

much more difficult than that successfully carried out in Ohio, the work of eradication is being pushed with all possible speed and there seems to be a fair chance of success.

India: New Diseases found in Burma (1).

The following new diseases were found in Burma during the year 1932 :—

(1) *Diplodia natalensis* Ev. was the main organism causing the rotting of fruits of mangosteens (*Garcinia mangostana*) in storage. The fungus was also found on dead twigs and rotted fruits in the gardens and these probably formed the chief source of infection.

(2) *Glomerella cingulata* (Atk.) S. and S. caused the withering of the twigs of *Coffea arabica*. It was serious in one estate.

(3) Banded Sclerotial Disease of sugar-cane caused by a sterile mycelium was found for the first time to some extent. At Myitkyina it occurred on leaf blades, while at Pyinmana it was mostly confined to the leaf sheaths. No serious damage was done to the plants.

(4) A species of *Cercospora* was found on the leaves of Sorghum causing small red or yellow spots according to the variety of the host similar to those caused by *Colletotrichum lineola* Corda. The yield of grain did not appear to be affected by the disease.

Other diseases which occurred to a slight extent were :—

Uromyces sojae (P. Henn.) Syd. on *Glycine hispida*.
Alternaria brassicae (Berk.) Sacc. on *Brassica* sp.
Aspergillus flavus Link on *Carica papaya*.
Aspergillus niger Van Tieghem on *Allium cepa*.
Phakopsora phyllanthi Diet. on *Phyllanthus distichus*.

Southern Rhodesia: Locust Invasion, 1933 (2).

Monthly Report No. 8, July, 1933.

1. — *Locusta migratoria migratorioides*, Rch. & Frm.

Neither reports nor specimens of the tropical form of the European Migratory Locust were received during the month.

The last survivors (all females) of adult specimens kept in cages since late in March died during July.

2. — *Nomadacris septemfasciata*, Serv.

Most reports of flying swarms of the Red Locust came from the more low-lying parts of the country. No definite migration was observed, and no swarms were noted to be flying high.

(1) Communication from the official correspondent of the Institute, Mr. Maung Thet Su, B. A. S. (Class 1.), Mycologist, Department of Agriculture, Agricultural College, Mandalay, Burma, India.

(2) Communication from Mr. Mervyn C. Mossop, Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

In a few cases winter cereal crops were stated to have been damaged, but, in general, threatened attacks were warded off successfully. As certain forest trees (e. g. *Brachystegia*) are expected to flush in August and to provide an adequate source of moisture for locusts, it is hoped that even less damage will be done during the remainder of the season.

Specimens taken from swarms during the month were red in colour, with the pink suffusion at the base of the hind wings about half developed.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Bulgaria. — By Verbal Note No. 456 of 4 August 1933, the Royal Legation of Bulgaria in Rome notified the Royal Ministry of Foreign Affairs of Italy of the adherence of Bulgaria to the International Convention for Plant Protection, signed at Rome on 16 April 1929 [see this *Bulletin*, 1929, No. 4, pp. 50-55]; the notice of adherence is accompanied by the declaration required by Article 22 of the Convention.

In accordance with the terms of Article 23 of the Convention, this will take effect for Bulgaria as from 4 January 1934.

China. — A letter from the Shanghai Bureau of Inspection and Testing of Commercial Commodities, Ministry of Industries, Shanghai, dated 5 August 1933, informs the International Institute of Agriculture that the National Government of the Republic of China is planning to establish a Plant Quarantine Service in the different ports of the country.

Spain. — In accordance with the Decree of 17 March 1933 any forests of which there seems reason to fear the disappearance, or in which there is risk of an appreciable reduction of products or output, in consequence of damage caused by animals or cryptogams, will be regarded as contaminated with forest enemies.

All matters relating to the control of such forest enemies, the phytopathological inspection of forest plants and products, also the official declaration of forest diseases and pests and the adoption of protection and control measures, will be directly dependent on the General Administration of Forests, Fisheries and Game. The Administration will also be responsible for taking the necessary steps to prevent the spread of the trouble by regulating the importation, circulation and sale of forest seeds, plants and products coming from places where the presence of any disease or pest liable to cause damage to forests has been ascertained.

The Municipalities will be required to inform the General Administration of Forests, Fisheries and Game of any disease or pest which makes its appearance within the forest areas under their jurisdiction. Owners or holders of forest lands are required to inform the authorities of their Municipality of any disease or pest observed on their land. This duty will devolve on the Civil Guard and

any persons responsible for rural policing in the case of forests situated within their jurisdiction.

In forests of public utility the work of protection and control of diseases and pests will be carried out entirely at the expense of the State. In other forests belonging to Corporations or private persons, whenever the importance and the nature of the case demands it, the State will provide for the technical direction of the control measures, the apparatus and machines and the necessary materials; the wages of the workers will be chargeable to the respective owners. (*Gaceta de Madrid*, Madrid, 23 marzo 1933, año CCLXXII, tomo I, núm. 82, págs. 2164 a 2166).

France. — By Ministerial Decree of 1 July 1933 permission is granted, with certain reservations, from 15 May to 25 September of each year, to the 'Syndicats de défense contre les ennemis des cultures', to send to regions not infested with the Colorado beetle [*Leptinotarsa decemlineata*] potatoes which are sound, clean and properly graded and have been harvested during the period specified above on land belonging to members of the said Syndicates, either in zones of protection or in zones infested with the beetle, except in the latter case if the potatoes come from fields in which the beetle is known to be present, the transport of such potatoes being strictly prohibited. (*Journal Officiel de la République Française*, Paris, 4 juillet 1933, LXV^{ème} année, nº 155, p. 6968-6969).

Italy. — By Ministerial Circular No. 378 of 13 July 1933 the regulations to be observed in the exportation of plants, plant parts and horticultural products to England were specified. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 15 agosto 1933, anno V, n. 16, pp. 3106-3107).

*** The Royal Decree Law No. 1051 of 29 July 1933 gives full and entire effect to the Treaty of Commerce and Navigation between the Kingdom of Italy and the Republic of Costa Rica, settled at San José on 14 June 1933.

According to article 14 of the Treaty the High Contracting Parties undertake not in any way to interfere with the reciprocal trade between the two countries by prohibitions or restrictions on importation, exportation or transit. Exceptions to this rule, in so far as they apply to all countries or to all countries in similar conditions, may be admitted for purposes, *inter alia*, of protection of animal or useful plants against diseases, insects or dangerous parasites. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 25 agosto 1933, anno 74º, n. 197, pp. 3794-3799).

*** By Ministerial Decree of 2 September 1933 the commune of Gaeta in the province of Rome has been declared infested with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 11 settembre 1933, anno 74º, n. 211, p. 4046).

*** By Ministerial Decree of 12 September 1933 the Commune of Parolise in the province of Avellino has been declared infested with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 23 settembre 1933, anno 74º, n. 222, p. 4288).

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